

data gathered was analyzed using SPSS version 12.0. Chi-square test was used to test the association between demographic profiles and level of satisfaction. All results with *P*-value less than 0.05 were considered significant. **RESULTS:** A high percentage of the respondents (*n* = 369, 47.8%) were satisfied with the provision of health-care delivery at the government hospitals and clinics. They were satisfied with the competency of doctors and staffs and standard of the facilities and services. However, 63.1% (*n* = 486) of the respondents had expressed their dissatisfaction toward the waiting time in the government hospital and clinic. The finding also showed that the factors that influenced the level of satisfaction were ethnicity and age. **CONCLUSIONS:** Most of the people in Penang were satisfied with the health-care delivery at the government hospitals and clinics. However, the waiting time in the hospitals and clinics need to be improved as an overwhelming proportion of the respondents were discontented with it.

PIH18

QUALITY OF LIFE IN THAI WOMEN DIAGNOSED WITH GENITAL WARTS, CERVICAL CANCER, AND CERVICAL INTRAEPITHELIAL NEOPLASIA AT KING CHULALONGKORN MEMORIAL HOSPITAL

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OBJECTIVES: To determine health related quality-of-life (QoL) of patients diagnosed with genital warts, cervical cancer, and cervical intraepithelial neoplasia (CIN), compare QoL across genital warts, CIN1, CIN2/3 and stages of cervical cancer and to study association between QoL and general characteristics of patients. **METHODS:** The cross-sectional descriptive study was conducted at the King Chulalongkorn Memorial Hospital using a standard questionnaire. The questionnaire elicited information on general patient characteristics such as age, occupation, and educational attainment, and on QoL using Functional Assessment of Cancer Therapy-General (FACT-G) questionnaire. The study population were patients with a diagnosis of one of the four FIGO stages of cervical cancer, cervical intraepithelial neoplasia low-grade (CIN1) or cervical intraepithelial neoplasia high-grade (CIN2/3) or genital warts as confirmed by physical and pathological examination. **RESULTS:** A total of 197 patients completed the study questionnaire with a diagnosis of genital warts (*n* = 25), CIN1 (*n* = 25), CIN 2/3 (*n* = 25), IA1 (*n* = 25), IA2 IB IIA (*n* = 37), IIB-IVA (*n* = 32) and IVB (*n* = 28). The mean age was 47.3 years and majority were housewives with educational attainment of primary school or lower. The adjusted mean scores were as follows: global QoL 78.08 (95% CI = 76.4, 79.8); physical well-being, 81.9 (95% CI = 79.6, 84.3); social well-being, 72.5 (95% CI = 70.1, 74.9); emotional well-being, 78.7 (95% CI = 76.3, 81.2); functional well-being, 79.3 (95% CI = 76.9, 81.7). There were no significant differences between stages of diseases and global QoL or subscales. We found a positive association between age and emotional well being scores (*P* = 0.001). Lower educational attainment was associated with higher emotional well being scores (*P* = 0.049). **CONCLUSIONS:** Our finding shows that, impact of QoL on disease of CIN or genital warts did not differ from cervical cancer. Young HPV related-disease patients and those with higher education may experience emotional difficulties. Social, family or religion support may be considered for these patients.

PIH19

ETHNIC/RACIAL DIFFERENCE IN SELF-ASSESSMENT OF HEALTH STATUS IN THE GENERAL US POPULATION

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OBJECTIVES: In population health surveys, self-reported health status is usually assessed by a single question. In spite of good face validity, such a measure may be susceptible to differential item functioning (or measurement bias). This study aimed to examine the differences in health status measured by the self-assessed health status (SAHS) question and the EQ-5D visual analog scale (EQ-VAS) between Hispanics, blacks, and others (all other ethnicities/races as one group) in the US. **METHODS:** We used the data collected in the US Valuation of the EQ-5D Health States study where a representative sample (*N* = 4048) of the non-institutionalized adult population was surveyed in 2002. Hispanics and blacks were oversampled for the survey. In face-to-face interviews, all respondents answered the SAHS question ("overall, how would you rate your health?") using a 5-point Likert-type scale (excellent/very good/good/fair/poor) and the EQ-5D which includes a vertical, 0–100 VAS for assessing global health. **RESULTS:** Excellent/very good health was reported by 64.4%, 65.1%, and 70.8% of Hispanics, blacks, and others, respectively. Mean (standard deviation) VAS scores for the Hispanics, blacks, and others were 84.7 (0.8), 83.5 (1.0), and 83.4 (0.6), respectively. In an ordinary least-square model, Hispanics (regression coefficient: 0.8) and blacks (regression coefficient: 0.2) were not different in VAS scores compared to others after adjusting for socio-demographics, smoking status, and presence of chronic conditions (both *P* > 0.05). In contrast, Hispanics (odds ratio: 0.51) and blacks (odds ratio: 0.64) were less likely to report excellent/very good health than others in a logit model with adjustment of other factors (both *P* < 0.001). **CONCLUSIONS:** Hispanics, blacks and other ethnicities in the US respond similarly to the EQ-VAS but differently to the SAHS question. Caution should be exercised when interpreting self-reported health status of culturally diverse populations as assessed by single-item measures.

HEALTH-RELATED QUALITY OF LIFE IN CHINESE CHRONIC PROSTATITIS PATIENTS

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OBJECTIVES: To examine the Health-related quality of life (HRQoL), and factors associated with HRQoL in Chinese CP patients using two generic preference-based HRQoL instruments, EQ-5D (plus EQ-VAS) and SF-6D, with the results compared with general population. **METHODS:** CP patients were recruited from two tertiary referral hospitals and the general populations were randomly approached in China. After informed consent, subjects were interviewed using EQ-5D, EQ-VAS and SF-6D, and their socio-demographic and medical information were solicited. **RESULTS:** Compared with the general population (*n* = 364), CP patients (*n* = 268) reported significantly worse HRQoL with median score of the EQ-5D utility index (0.73 vs. 0.85), SF-6D utility index (0.76 vs. 0.81) and EQ-VAS (70.0 vs. 85.0). Multiple linear regression analyses showed pain symptom had the strongest predictive power for HRQoL, compared with symptom duration and urinary symptom. Socio-demographic factors and comorbidities did not significantly contribute to poorer HRQoL. **CONCLUSIONS:** CP patients experienced deteriorated HRQoL with lower health-related utility scores compared to general population and pain severity was the main physical symptom predicting decreased health-related utility. Further studies are needed to provide the reference utility index for the comparison and better characterizing the influence of geographic and cultural factors in variation of health-related utility of CP patients.

PIH20

PIH21

QUALITY OF LIFE IMPACT IN PARENTS CARING FOR SEVERE GASTROENTERITIS IN CHILDREN IN SEVEN COUNTRIES WORLDWIDE

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OBJECTIVES: To assess QoL impact of parents caring for children with severe gastroenteritis (GE) world wide using a questionnaire. Pooled analysis was carried out to investigate the relationship between disease severity and QoL. **METHODS:** A questionnaire was developed to retrospectively assess the disease severity and QoL-impact of parents with hospitalized children (<2 years) in seven countries (Thailand, Philippines, Vietnam, Columbia, Ivory Coast, Egypt, Malaysia). A minimum of 200 parents filled in the questionnaire per country (*n* = 1552). Disease severity was analyzed through symptom type (vomiting, fever, diarrhea, dehydration, weight loss), duration (days), and intensity (mild, moderate, severe). QoL impact was assessed through degree of parents worriedness related to each symptom (not at all, a little, quite a bit, very). Additional data collected included length of hospital stay (LOS) and cost of stay. Statistical analysis included the development of composite variables for disease severity and worriedness level using multitrait scaling. Intensity levels of symptoms were explored using principal component analysis (PCA). Cluster analysis was used to generate homogeneous groups of subjects with respect to intensity levels. **RESULTS:** Univariate analysis showed significant associations between symptom duration and parents worry (*P* < 0.001) and between symptom intensity and parents worry (*P* < 0.001). Both variables were significant in a multiple linear regression model (*P* < 0.05). Consistent results were observed in all countries. The mean LOS varied considerably between countries. A slight correlation was seen between LOS and cost of stay (0.144). **CONCLUSIONS:** The level of parent's worriedness increases linearly with symptom duration and intensity level of gastroenteritis in children worldwide.

INDIVIDUAL'S HEALTH – Health Care Use & Policy Studies

PIH22

DO LOW-INCOME GROUPS IN PAKISTAN UNDERSTAND THE CONCEPT OF GENERIC MEDICINES?

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OBJECTIVES: According to United Nations Development Program (UNDP) Report more than 65% of the population earns less than \$2/day and thus, affordability of medicines is a critical issue in this highly vulnerable group. This research study aimed to investigate the understanding of generic medicines among low-income groups in peri-urban communities of Karachi, Pakistan. **METHODS:** Qualitative methodology was adopted to collect in-depth information on this unexplored issue. Ethical approval for the study was sought from Ministry of Health, Government of Pakistan. Research participants were recruited by snowball sampling. After obtaining informed consent 13 semi-structured interviews were conducted from January 2009 to March 2009 in two peri-urban communities of Karachi, Pakistan. The interviews, which were conducted till the point of saturation, were audio-taped, transcribed verbatim and translated into English for analysis. **RESULTS:** Interview transcripts were subjected to content analysis for the identification of themes. Specific emergent themes included 1) deficient knowledge of generic medicines; 2) drug seller as the solo medicine provider; 3) contact to medical doctor in children illnesses; and 4) belief in alternative therapies. None of the respondents identified the concept of generic medicines. On explaining to them about generic medicines all of them expressed their ignorance about the pres-

ence of cost-effective alternatives. All of them preferred to contact medical store/druggist/chemist shop/pharmacy for their minor and major ailments, communicable and non-communicable diseases. Interestingly, most of the respondents agreed to visit public hospitals or contact medical doctors only in case of their child's illness. Most of the respondents showed their trust in herbal therapies rather than allopathic medicines. **CONCLUSIONS:** The current study identified absence of understanding of generic medicines. Mass media awareness campaigns should be used for educational initiatives to inform the consumer about cost-effective alternatives

PIH23

A REVIEW OF POSITIVE LIST SYSTEM IN KOREA: ACHIEVEMENTS, CHALLENGES AND SUGGESTIONS

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OBJECTIVES: In Korea, as drug costs reached up to 30% of total NHIC budget and total drug expenditures doubled from 2002–2006 that led to increasing budget deficits, MOHW (Ministry of Health and Welfare) called for positive list system in December 2006. It requires pharmacoeconomic evaluation and price negotiation with single payer to pharmaceutical companies. At the point of 3 years passed after this policy introduction, we try to evaluate this policy with balanced manner between its achievements and challenges. We also try to suggest some supplementary proposal to make this policy sustainable in Korea. **METHODS:** We analyzed four reports which deal with positive list system in Korea from 2007 to 2009. We also reviewed several key analyses performed by media and academic association regarding this policy in the same periods. Among these reports and the investigations, we collected main achievements and challenges raised by all relevant stakeholders from 2007 to 2009. **RESULTS:** The main achievements are fast development of HTA infra, the establishment of evidence based decision-making and reduction of reimbursement price level comparing with negative list system. While, the key challenges raised by each stakeholder group are lack of transparency, deficiency of data support by government and price focused approach in selection of comparators. **CONCLUSIONS:** Our supplementary suggestions are no reimbursement guarantee in NHI for mild disease such as simple cough over the age of 13, reinforcement of health insurance guarantee level based on accurate budget forecast, financial agreement (risk share) between NHIC and company and performance based pricing.

PIH25

PERSPECTIVE OF THAI HEALTH-CARE PROFESSIONALS ON THAI HERBAL MEDICINE POLICY

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OBJECTIVES: Drug expenditures in Thailand have been rapidly increased every year. A major cause of growing drug expenses is the introduction of western medicine. Thai Ministry of Public Health has implemented a policy to reduce drug expenditures by promoting the use of herbal medicine in all levels of care. In 2011, the proposed policy expects the herbal medicine expenditures grow by 25% of medicine expenditures in hospitals. To be successful in this policy, opinion of health-care professionals and their limitations on herbal medicine use must be explored. The purpose of this study is to examine the opinion of health-care professionals including physicians, pharmacists, and Thai traditional medicine practitioners on Thai herbal medicine policy. **METHODS:** Qualitative methods were used. Focus group interviews among the frequent user group and in-depth interviews among occasionally user group were conducted. **RESULTS:** The findings show the perspective of health-care professional on several issues. 1) The policy is difficult to achieve in all levels of health-care settings. Primary care and the secondary care units are more suitable for herbal medicine utilization, comparing to tertiary care units. Therefore, the policy should set different expenditure targets on Thai herbal medicine for different levels of health care; 2) Leadership is the key determinant in the success of herbal medicine utilization; and 3) health-care professionals were concerned that Thai herbal medicine was not produced according to GMP, and the supply of Thai herbal medicine was insufficient due to limited number of manufacturers and raw materials. **CONCLUSIONS:** Policymakers should provide clear and transparent protocols and/or policies in order to develop a practical system for promoting the use of herbal medicine at macro-, meso-, and micro-level. Furthermore, the policymakers should provide budgetary support and incentive for hospitals that achieve the target in order to promote the use of Thai herbal medicine.

PIH26

MEDICATION CHECKUPS BY COMMUNITY PHARMACISTS—EXPERIENCE OF “BROWN-BAG” REVIEWS IN JAPAN

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OBJECTIVES: Limited information is available for elderly patients taking multiple medications including prescription drugs, over-the-counter medications and dietary supplements. Brown-bag medication review was examined as a tool for pharmacists to understand drug utilization patterns, reduce potential problems and provide appropriate advice to patients. **METHODS:** Medication review was carried out by 179 community pharmacies in Hiroshima Japan between October and December, 2009. Elderly patients 65 years or older were asked to bring all medications that regularly

used at home to neighborhood pharmacy. Pharmacists checked medication names, usages and potential problems. Patients were advised if medications were used incorrectly, had potential interactions and safety concerns. Patients' characteristics, medications and pharmacists' advice were recorded for analyses. **RESULTS:** Information about medications and advice were corrected from 526 elderly patients. Mean age was 74 years and 37% were male. About 97% patients used at least one prescription drug and mean number of prescription drug use was 6.3 (range: 1 to 20). Among prescription drug users, 62% used at least five prescription drugs, 34% used over-the-counter medications, and 54% used dietary supplement, concurrently. Pharmacists provided advice to 250 patients (49%) that indicated potential interaction problems (20%), over/under use (5%), inappropriate medication use (10%) and lack of medication adherence (10%) and preventable adverse reactions (15%). Major problems found through medication reviews were multiple combinations of NSAIDs, overdose of benzodiazepines, overuse of dietary supplements, and lack of medication adherence for treatment of osteoporosis and diabetes-related eye disorders. Two cases of contraindicated drugs were found (bezafibrate vs. HMG-CoA reductase inhibitor). **CONCLUSIONS:** Brown-bag review can be a useful tool to promote patient/pharmacist communications, identify potential safety problems and provide advice for appropriate medication use. Community-based promotion activity is a key factor to increase participants of the event and to reach target populations who have no regular checkups at family pharmacy.

PIH27

ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE (HRQOL) AMONG NON-PRESCRIPTION MEDICINE CUSTOMERS IN MALAYSIA

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OBJECTIVES: To determine the HRQoL among over-the-counter (OTC) medicine user in Malaysia as measured by EuroQoL instrument and the factors that affected it. **METHODS:** A nationwide cross-sectional survey was conducted with adult pharmacy customers (>16 years old) in 10 randomly selected community pharmacies in seven different states in Malaysia by trained data collectors from May 2008 to June 2008. The self-administered questionnaire includes the EuroQoL EQ-5D (Health State Classification), EQ-VAS (thermometer) and demographic questions. Data were analyzed using Kruskal-Wallis and Mann Whitney tests in SPSS v15. **RESULTS:** A total of 599 customers was included in this study with mean EQ-5D score of 0.90 (SD = 0.16) and VAS score of 0.74 (SD = 0.17). This study found that pain/discomfort (30.36%) and anxiety/depression (13.3%) were the major HRQoL problems among Malaysian pharmacy customers. Elderly had lower mean EQ-5D scores and VAS were lower for older age group and reported more problems in every dimension of EQ-5D Health Classification. This study also found that there was significant differences between EQ-5D score and VAS-score ($P < 0.001$). **CONCLUSIONS:** Community pharmacy customers' HRQoL who are using non-prescription medicine is comparable with the general population. The HRQoL of the customers is affected by their age, gender, ethnicity, education, and household incomes.

PIH28

DETERMINANTS OF HEALTH SERVICE UTILIZATION FOLLOWING THE 2004 TSUNAMI IN THAILAND

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OBJECTIVES: On December 26, 2004, a massive earthquake struck Indonesia, triggering a tsunami that affected several countries. This catastrophic event had important implications for health system planning; and thus, underscores the need to study the long-term impact of this disaster. This prospective cohort study aims to identify the determinants of health service utilization in tsunami-affected provinces of Thailand, 1 and 2 years after the disaster. The relationship between being affected by the tsunami and health service utilization were also investigated. **METHODS:** Participants were randomly selected Thai citizens (aged 14+), living in Phuket, Phang Nga, Krabi, or Ranong. Approximately 1 and 2 years after the tsunami, participants were interviewed in-person on demographic and socio-economic characteristics, disaster impact, health status, and health service utilization, using five questionnaires. Five types of health services were examined: outpatient, inpatient, home care, medications, and informal/unpaid care. Two-stage sample selection model, more specifically probit model and negative binomial model with Heckman correction, were employed to identify determinants of the probability and intensity of utilization, respectively. **RESULTS:** There were 2079 participants in the first interview and 1989 in the second interview. Determinants of health service utilization depended on the type of health service being examined, and the assessment time after the disaster. Being affected by the tsunami was significantly associated with the propensity to use medications, 2 years after the disaster, $P = 0.0125$. **CONCLUSIONS:** The study findings can assist health providers in identifying population at risk of using health services. Accordingly, regional health officers can request appropriate amount of health resources in order to deliver high quality care tailored to specific population. The findings may also assist policy-makers in the development of long-term disaster recovery plan. Additionally, the study findings may not be specific to a tsunami disaster and may provide insights on post-disaster contexts of other natural disasters.